

D. Remarks

Claims 10-17 are presented for examination in lieu of claims 1-9, which have been cancelled without prejudice or disclaimer. Support for the new claims may be found in the original, cancelled claims, as well as throughout the specification (see, e.g., page 15, line 14 – page 18, line 17). The title has been amended to better reflect the subject matter being claimed. No new matter has been added. Consideration of the present claims is expressly requested.

The Examiner objected to the title for not being sufficiently descriptive. Applicant has amended the title and respectfully requests withdrawal of the rejection.

Claims 1-9 stand rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite. Specifically, the Examiner alleged that claims 1, 2, 5, and 7 are incomplete in that essential elements with respect to the control of the valves are not recited.

Since all rejected claims have been cancelled, this rejection is moot. The new claims elaborate on the control of the valves in more detail and are believed to fully comply with Section 112.

Claims 1-5 and 7-9 stand rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by U.S. Patent Application Publication No. 2006/0118175 A1 (Mathison).

Since the rejected claims have been cancelled, this rejection is moot.

Furthermore, Applicant notes that the present application is a national stage of International Application No. PCT/JP2005/005609, filed March 18, 2005, which claims priority from Japanese Applciation No. 2004-089535, filed March 25, 2004. Since Mathison was filed on December 2, 2004, which is after the filing date of JP 2004-089535, Applicant submits herewith a sworn translation of the Japanese priority application to antedate Mathison. Therefore, it is respectfully submitted that Mathison is not prior art and all rejections based thereon should be withdrawn.

Claims 1-5 and 7-9 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent Application Publication No. 2004/0062961 A1 (Sato).¹ Claim 6 stands rejected under 35 U.S.C. § 103(a) as being allegedly obvious from Mathison and/or Sato in view of U.S. Patent Application Publication No. 2004/0232373 A1 (Sonoda).

Since all rejected claims have been cancelled, these rejections are moot.

Applicant respectfully submits that the new claims are patentable over Sato, whether considered alone or together with Sonoda. The instant invention, in pertinent part, is related to a fuel supply device, which supplies a fuel gas introduced from a fuel cartridge

¹ As mentioned above, this application is a national stage of International Application No. PCT/JP2005/005609, filed March 18, 2005. Since Sato was published on April 1, 2004, which is less than one year before the filing date of the PCT application, Sato does not qualify as a reference under Section 102(b). In view of the submission of the sworn translation of the Japanese priority document, it is respectfully submitted that Sato qualifies as prior art only under Section 102(e).

to a fuel cell through a flow passage. This device includes a fuel introduction valve that introduces the fuel gas into the flow passage from the fuel cartridge, a purge valve that discharges from the flow passage and into the atmosphere any gas other than the fuel gas introduced into the flow passage to effect gas replacement, and a fuel supply valve that supplies the fuel gas introduced into the flow passage to a fuel cell main body. The device may also include a fuel movement valve comprising a diaphragm, which is displaced in accordance with a pressure of the fuel gas in the flow passage.

The operating portion of a pin of the fuel introduction valve, an operating portion of the purge valve, and an operating portion of the fuel supply valve, which are provided at outside of the flow passage, are operated by at least one of a mechanical operation and an electrical means to open and shut the fuel introduction valve, the purge valve, and the fuel supply valve to perform a control, whereby the fuel gas is supplied to the fuel cell.

Sato is directed to a fuel cell system. Figs. 8-13 in this reference were deemed to read on the claimed invention. In particular, valve 75 was deemed to correspond to the purge valve of the present invention. Applicant respectfully disagrees, particularly in view of the language of the new claims, as discussed below.

In Sato, when the valves 71, 72, 76B, 81, and 82 are closed and the valves 74, 75 and 76A are opened, the first chamber 80A is filled with hydrogen rich gas (paragraphs [0071] - [0072]). The hydrogen rich gas has a higher pressure than

atmospheric pressure even after passing through the CO gas removal apparatus, because a saturated vapor pressure of dimethyl ether (DME) at room temperature is about 6 atm, as explained in paragraphs [0027] and [0030].

The hydrogen rich gas filling the first chamber 80A pushes the partition 80C. Therefore, the volume of the second chamber 80B is reduced, resulting in the pressure in the second chamber 80B being the same as the high pressure of the hydrogen rich gas. Then, the valve 75 is closed, the valve 76B is opened, and the valve 81 is opened, whereby the atmosphere, which has been made to be at high pressure, is supplied to the air electrode 15C of the fuel cell.

Although this is not specifically mentioned in Sato, when the valve 76A is closed and the valves 75 and 76B are opened, and the hydrogen rich gas is consumed in the fuel cell, the pressure in the pipes 79A, 79, 34B, and 34C decreases. However, when the valve 82 is opened, atmosphere is supplied to the second chamber 80B.²

Accordingly, the valve 75 is a valve, which supplies the hydrogen rich gas that has higher than atmospheric pressure to the first chamber 80A. The hydrogen rich gas supplied to the first chamber 80A is supplied only to the fuel passage, and there is no flow passage to purge it into the atmosphere.

Thus, it is respectfully submitted that the valve 75 in Sato does not correspond to the purge valve, which discharges gas into the atmosphere, as presently

² Reference number 80 is the first oxygen supply unit, and it, as explained in paragraph [0068], replaces the

claimed. In fact, Applicant respectfully submits that if the valve 75 in Sato were to purge gas into the atmosphere, the apparatus in Figs. 8-13 of Sato would cease to function for its intended purpose because, for example, gas would not be supplied to the chamber 80A to apply the needed pressure.

In sum, Sato discloses an apparatus, which is substantially different from the present claimed invention. It does not disclose or suggest, for example, a purge valve as recited in the present claims.

Sonoda cannot cure the deficiencies of Sato. Sonoda was cited for a teaching of a valve, which is capable of reducing pressure by using a diaphragm. However, even if so, Sonoda lacks the same disclosure as Sato with respect to the construction of the apparatus as discussed above.

Wherefore, withdrawal of all outstanding rejections and passage of the application to issue are respectfully requested.

first pump 18 shown in Fig. 5.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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